

Seasonal High Tunnel System for Crops

Interim Conservation Practice Job Sheet

Natural Resources Conservation Service

798 OR-JS

November 2011

Client Name: _____



Photo Source: www.hightunnels.org

Definition:

A seasonal polyethylene covered structure with no electrical, heating, and/or mechanical ventilation systems that is used to cover crops to extend the growing season in an environmentally safe manner.

Purposes:

- Extend the crop growing season
- Improve plant quality, productivity and vigor
- Improve soil quality
- Improve water quality

Where the Practice Applies:

A seasonal High Tunnel may be used on land where crops are grown in open field conditions and the growing season is extended under the structure.

Seasonal High Tunnel System for Crops Practice Standard 798 is most effective

when combined with other conservation practices as a system to achieve identified conservation purposes and meet the client's objectives.

Supporting practices commonly applied within the covered High Tunnel area include Nutrient Management 590, Pest Management 595, Irrigation water management 449 and Crop Rotation 328.

Supporting practices are often used to protect water and soil resources surrounding the covered high tunnel area from increased risk of concentrated flow of water from the High Tunnel. These practices may include gutters or rock filled trenches with a suitable underground drain/outlet, infiltration basins, residue management practices or grassed waterways.

Specifications

Structures shall be obtained from a commercial source. There are many commercially available Seasonal High Tunnel structures on the market.

Implementation of a Seasonal High Tunnel System shall meet all Federal, State, Tribal and local regulations and permit requirements.

The High Tunnel structures shall be of adequate size to obtain 100 percent coverage over the crop area. The structure cover, at a minimum, shall be made of 6-mil greenhouse-grade, UV resistant polyethylene. Center height of structure shall be a minimum of 6 feet.

All materials shall be of significant thickness to withstand the temperature modification for the period required. To prevent damage from winter time conditions such as snow and ice loading, the tunnel cover shall be removed at the end of each growing season.

The High Tunnel System along with necessary appurtenances shall be designed to provide a service life of not less than 4 years.

The High Tunnel structure must be planned, designed, and constructed in accordance with manufacturer's recommendations.

Runoff shall be directed away from the tunnel structure. Where needed, additional conservation practices shall be installed to prevent runoff water generated from the High Tunnel area from ponding, generating concentrated flow and/or causing soil erosion concerns.

Surface or ground outlets such as rock pads, rock filled trenches with subsurface drains, concrete and other erosion-resistant pads, or preformed channels may be used. Surface and ground outlets shall be sized to ensure adequate capacity. Runoff may be captured and used for irrigation purposes.

Site-specific requirements and applied specifications included in this job sheet are prepared in accordance with the NRCS Field Office Technical Guide. See Interim conservation practice standard Seasonal High Tunnel System for Crops (798).

Operation and maintenance

An operation and maintenance (O&M) plan must be prepared and reviewed with the landowner or operator. The O&M plan shall outline the level of repairs needed to maintain the effectiveness and useful life of the Seasonal High Tunnel system.

INTERIM 798-OR-JS**Natural Resources Conservation Service****November 2011**

Client / Business Name			
Operation Location		County	
Planning Assistance by		Date	

Site Specific Resource Attributes Prior to High Tunnel				Critical Season (Month Range)			
Soil	Slope %	Slope Length (ft)	T	Snowfall	Wind	Rainfall	Annual Precipitation Inches

Client Objectives			
Practice Purpose(s) (Check all that apply)		Extend the crop growing season	Improve Plant Quality
		Improve Soil Quality	Improve Water Quality (reduced nutrient & pesticide transport)

High Tunnel Manufacturer					Installation Date		
Length in Feet		Width in Feet		Center Height in Feet		Square Feet	Orientation
Site preparation and re-vegetation of disturbed areas:							
Run-off Control Requirements:							

Soil Quality, Production and Erosion Assessments	Before Installation			After Installation		
	Crop	Planting Dates	Biomass Yield DM lbs/acre	Crop	Planting Dates	Biomass Yield DM lbs/acre
Crop Rotation						
Average Annual Rotation Soil Quality	STIR		SCI		STIR	
Average Annual Rotation Erosion tons/acre	Sheet/Rill		Wind		Sheet/Rill	

Planned Pest Management: Attach IPM plan with 595 Job Sheet	
Planned Nutrient Management: Attach 590 Job Sheet specification	

Supporting Conservation Practices, Installation Dates and Resource Concerns Addressed

Conservation Practice	Date	Resource Concerns Addressed

Additional Specifications

- Attach Conservation Plan Map: Identify Planned/Installed Seasonal High Tunnel site(s).
- Include any associated conservation practices planned for area(s) around the site(s).
- Also include nearby sensitive resource areas, buffers, and other any other

Operation and Maintenance

Inspection, Repair and Cover Removal Dates; Crop Management Records and Conservation Practice Maintenance

- Operation of equipment near and on the site shall not compromise the intended purpose of the structure.
- Covered area shall be periodically inspected and shall be reinstalled or repaired as needed to maintain the useful life of the practice (4 years).
- Removal of cover materials shall be consistent with the intended purpose and site conditions.
- Maintain proper drainage around and away from the high tunnel structure.
- If plastic cover is removed for winter storage, place the material where it will not be handled, moved, or disturbed when cold.

DESIGN APPROVAL:

Practice Code No.	PRACTICE	LEAD DISCIPLINE	CONTROLLING FACTOR	UNITS	JOB CLASS				
					I	II	III	IV	V
798	Seasonal High Tunnel System for Crops	BCSD-Agron	Area	Sq Ft	<1000	1000-2000	>2000	All	All

This practice is classified as Job Class: _____

Design Approved By: /s/ _____ Date: _____

Job Title: _____

CLIENTS ACKNOWLEDGEMENT STATEMENT:

The Client acknowledges that:

- a. They have received a copy of the specification and understand the contents and requirements.
- b. They will install, operate, and maintain this conservation practice in accordance with the site specific Job Sheet specifications.
- c. They will make no changes to the planned design and installation without prior notification and approval.
- d. They will assume responsibility for notifying all Utilities affected by the installation, operation and maintenance of this conservation practice.
- e. The information on Page 2 of the job sheet needs to be provided to NRCS by the client before this practice can be certified as applied:

Accepted By: /s/ _____

CERTIFICATION:

I have completed a review of the information provided by the client and certify this practice has been applied.

Certification By: /s/ _____ Date: _____

Job Title: _____

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